Abstract
This paper examines the relationship between rural dwellers and Internet technology and aims to understand how that relationship is altered with a significant increase of broadband speed. It presents an argument for using 'resilience' as a framework for such technological impact research, positing its potential usefulness for identifying alternative development narratives. Using interview data from 36 individuals in a study conducted with two rural community-based superfast broadband organisations in the UK, it identifies whether superfast broadband plays a role in enhancing rural community resilience. Anticipated outcomes are identified including an increased use of high capacity services, specifically video services, and also the potential for making new patterns and habits of usage through alternative connection possibilities. Superfast access is equated to increased control over everyday actions, and the need for speed is positioned in relation to the reliability that speed provides for users. Finally, the Internet is perceived broadly as an individualised tool, one that can be accessed for personal skill building, empowerment and ultimately individual scale resilience. These findings highlight the complex, and at times contradictory nature of the relationship between superfast broadband, rural users and potential individual and community resilience. This paper concludes by identifying future research directions.

Keywords: rural geography, superfast broadband, community resilience, broadband policy

Introduction

Spatially, it is broadly acknowledged that households in rural United Kingdom are less likely to have access to superfast broadband (Townsend, et al., 2013), understood here as Internet connections with speeds of at least thirty megabits per second[1], even with ambitious nationwide goals in place for deployment (see DMCS, 2013). Additionally, current available services for rural areas are characterised by high cost and low speed (Ofcom, 2012). Superfast broadband access is positioned by policymakers as providing economic and social benefits across a range of sectors for rural dwellers (DMCS, 2013; Digital Scotland, 2013; Superfast Cymru, 2013), but further robust research is needed to develop these assertions. This paper examines the relationships rural individuals and communities have with the Internet and incoming superfast broadband to develop an understanding of its influence through the theoretical lens of resilience. This paper will first review the literature on resilience as a development concept and demonstrate its potential for technology research. It will then provide a brief summary of the superfast broadband policy landscape in the UK to contextualise the 'need for speed'. Finally it will present findings from an ongoing study and explore the outcomes and meanings of superfast broadband for rural dwellers in the context of resilience enhancement.

Resilience: A framework for broadband research

There is a vast array of literature discussing and debating resilience. Ecologically, resilience refers to the development of ecosystems and their ability to absorb changes and maintain structure in times of disturbance (Holling, 1973). The key features of a system in this context are: speed and resistance; how fast it can return to an equilibrium; and how resistant it is to such dynamic disturbance and shocks (Adger, 2000). Social-ecological resilience builds upon this understanding to represent the ability of a community to withstand shocks due to external, ecological factors (Adger, 2000). In relation to rural areas, shocks, or changes, can include depopulation, a loss of, or a disinclination to develop, public services for small populations and demographic ageing

(see Delfmann et al., 2014), which require individuals and communities to be able to adapt and adopt new practices (i.e. be resilient) to address such changes to their community structure and livelihood. This notion of resilience is concerned with adapting to stresses to maintain acceptable levels of function and identity. Much disaster recovery literature that uses this understanding of resilience applies it in a very 'dictionary', straightforward sense, which is critiqued as providing little to no additional benefit as an analytical concept (Berkes and Ross, 2013).

However, in recent literature 'community resilience' has been developed further and can be understood to have a much broader scope, incorporating empowerment and development processes at the individual and related community scale (Skerratt and Steiner, 2013). Resilience is often discussed in relation to both individual and community, and this article furthers this discussion. Egeland, et al., (1993) for example, were concerned with individual resilience, looking at the capacity for successful adaptation despite high-risk status, chronic stress or severe trauma. Butler et al. (2007) also highlighted this individual scale resilience, discussing adaptation under extenuating circumstances: a resilient person can "bend rather than break in the face of adversity" (p. 402). The idea of scale – that is, of individuals and communities, or larger entities - is echoed broadly across the literature. Resilience concepts are thought to apply at all levels, from individual to earth system and in any given case, resilience phenomena are occurring simultaneously at nested and interacting levels (see Berkes and Ross, 2013; Wilson, 2012). Thus, transformational change at an individual level may enable resilience at a higher level. In general a community whose individuals are personally resilient in the face of adversity are likely to contribute to community, or regional resilience. For example, a farm's food production assists the food security of its community and distant regions, and the economy of its nation. This is not a definitive relationship however; the loss of the main financial contributor to a family could be devastating to that household unit, but would perhaps not influence the community overall. In these instances, agents seek transformation, a process by which individuals and collective actors build on community strengths and capitals to adapt (Berkes and Ross, 2013).

As Folke (2006) discusses, it is evident that resilience of complex adaptive systems, like communities, is not simply about resisting change or conserving existing structures. Rather, it is about the 'opportunities that disturbance opens up in terms of recombination of evolved structures and processes, renewal of the system and emergence of new trajectories' (Folke, 2006, p. 259). It allows for adaptive capacity building and generates a dynamic relationship between sustaining and developing with change. If we consider shocks commonly occurring within rural areas, as mentioned earlier, we can see that by being resilient, or having resilience characteristics, individuals and their respective communities can respond to such change in a proactive manner. Individuals and communities with limited or static capacities, conversely, run the risk of slowed recovery and prolonged dysfunction (Sherrieb et al., 2010). Resilience is then constructed as being a part of the evolving nature of evaluating community growth and transformation.

Magis (2010) further contextualises this notion of community resilience, defining it as:

> '…the existence, development, and engagement of community resources by community members in order to thrive in an environment characterised by change, uncertainty, unpredictability, and surprise. Members of

> resilient communities intentionally develop personal and collective capacity that they engage to respond to and influence change, to sustain and renew the community, and to develop new trajectories for the communities' future' (p. 402).

This demonstrates resilience as a multi-dimensional construct, a proactive process of developing capacities at both the individual and collective, or community scale. Resilience emphasises transformation or path creation in response to disturbances, whereby development does not follow a single path, but rather multiple pathways (Wilson, 2012). Resilience as a theory has the ability to act as an analytical concept producing new insights and perspectives, and it can provide an alternative policy narrative for development practice, both of which are useful in contemporary geographical research (Scott, 2013).

To reflect broadly on communities and technology: rural economy and society are commonly held to be enhanced by the inclusion of Internet access, particularly its latest generation, superfast broadband (DMCS, 2010), and therefore it is hypothesised that it may influence the resilience of such communities. Despite this potential, rural communities are rarely at the forefront of next generation technology and broadband provision is often aggravated by a lack of market presence due to smaller and more dispersed populations, and physical geography challenges, such as distance from exchanges, backhaul access points and fewer street cabinets (Skerratt, et al., 2012). Urban coverage conversely is relatively stable and continuously being improved, particularly as superfast broadband roll out is cheaper to deploy in higher density areas and has been prioritised by the telecommunications industry (Briglauer and Gugler, 2013; Ofcom, 2013; Skerratt, 2010). Those in rural areas that do gain access to basic broadband tend to suffer from slow speeds and increased costs (Ofcom, 2012). In terms of individuals or households, broadband can contribute to social connections, education and government services accessibility, and provide alternative means of access for ageing populations and remote households, which would otherwise be at a disadvantage. Businesses can connect for ease of everyday activities (i.e. limiting paper transactions, email, ordering supplies, and advertising) as well as creating additional avenues for growth (i.e. operating an online marketplace) and generating additional collaborations (see DMCS, 2010). On the community level, broadband can be used for shared activities such as engaging in, or formulating, community-wide protests (i.e. for or against wind farms, pylons) or active citizenship activities (such as actively trying to retain public services). For example, Peronard and Just (2011) studied broadband adoption motivation, and found that it aided the communication of local initiatives, and generated a higher level of local activity. This is not an exhaustive outline of what broadband can be used for, but it highlights the potential for both individuals (households and businesses) and communities to use broadband. In this resilience context then, it is relevant and significant to examine individual and community use of superfast broadband and determine, through discussions with rural residents, in real terms how and if interaction with broadband builds adaptive capacities to support future individual and community recovery and transformation.

Superfast Broadband Policy

Multiple policies exist to support broadband development at the supranational level, including the *OECD Communications Outlook* (OECD, 2013), and the *Digital Agenda for Europe* (DAE) (European Commission, 2010). The state of broadband in the UK

has been heavily influenced by these policies, as well as its own national policy landscape. *Digital Britain 2009* represented an initial step towards achieving universal access across the UK (BIS, 2009) and *Britain's Superfast Future 2010* lays out the UK's priorities for network development, focusing mainly on superfast to spur economic growth and innovation (DMCS, 2010). The current aim of the UK Government is to provide 95 percent of premises in the UK with superfast broadband by 2017 (Ofcom, 2013).

The main method for broadband delivery in the UK is through commercial avenues, involving little interaction from government policy (Ofcom, 2012). In an effort to combat the inequalities that commercial avenues create between urban and rural fixed-line provision (see Townsend et al., 2013; Skerratt, 2010; Preiger, 2007; Hindman, 2000; Parker 2000), policy frameworks are shifting to include government intervention in rural regions of the UK not achieving high broadband quality. This includes initiatives such as Broadband Delivery UK (BDUK) run by the Department of Media, Culture, and Sport (DMCS, 2013). Under the broad umbrella of BDUK, multiple policies and funding avenues have been developed to enhance both urban and rural broadband deployment. Urban centre development is supported through a 'super-connected' cities initiative, primarily contributing to costs for small businesses to get connected. Rural development is supported through three methods: firstly with policy developed to stimulate commercial investment through the rural broadband programme, which provides part monies to local authorities and devolved administrations that then contract private sector companies to enable connectivity, a commitment totaling £780 million as of June 2013. Secondly, an additional £10 million has been allocated for a competitive fund to market test innovative solutions for hard to reach locations. Finally, the Rural Community Broadband Fund was also established, an additional competitive fund from which the hardest-to-reach rural regions can apply for a share of £20 million to help community projects get speeds faster than 2Mbit/s (DMCS, 2013).

Regional policy, including *Scotland's Digital Future*, identifies the need for broadband and also the barriers that currently exist, namely access, confidence and inclination (Scottish Government, 2012). *Digital Scotland* aids in the roll out of superfast to regions where commercial actors have chosen not to develop in order to achieve 95 percent fibre-optic broadband coverage by the end of 2017 (Digital Scotland, 2013). This includes the development of *Community Broadband Scotland*, which assists rural communities to play a central role in developing their broadband needs. *Digital Wales* (as well as the *Next Generation Broadband Project for Wales*) is similar to Scotland's policy in creating a target of ensuring universal access to 30Mb/s by 2015, and also supporting community-led broadband development (Welsh Government, 2013; Carnegie UK Trust, 2012). Finally, Northern Ireland's *Telecommunications Action Plan for Northern Ireland* echoes the need for broadband and the rural challenges of deployment (DETI, 2011).

Despite this push for superfast technology from policymakers across the rural spectrum to address spatial digital divides, limited studies have been done on the influence of superfast options on communities in relation to older, slower technologies. Laudeman (2005) acknowledges this gap in literature and focuses on the impact of information communication technologies (ICT) on community–level socio-economic development, but does not specify the type or saturation level of technology. Ofcom (2013) conducted

studies to determine why users switched to superfast specifically, finding that value for money was critical, however there was little detailed discussion on how the service was impacting them and their communities after adoption. This study specifically focuses on the switch to fixed-line superfast broadband to respond to this lack of detailed knowledge. The multitude of policy levers has brought rural superfast broadband to the forefront of infrastructure development interest and this paper seeks to set out some of the potential outcomes of such deployment within a resilience context.

Research Methods

The study considers two rural community-led superfast broadband initiatives in the UK: Broadband for the Rural North (B4RN) in England[2] and Broadband for Glencaple and Lowther (B4GAL) in Scotland[3], both of which embody a not-for-profit business model whilst mapping and installing their own superfast, fibre-optic cable, broadband networks, representing a locally-based solution to achieving superfast broadband. This paper seeks to understand a) whether superfast technology plays a role in enhancing rural community resilience and b) how superfast broadband is positioned and perceived in the community and the relationship with resilience.

This research was undertaken during the summer of 2012 and the spring of 2013 as the two regions were in the initial stages of developing their broadband networks and signing up customers but had not yet rolled-out the service. In-depth semi-structured qualitative interviews were conducted with a range of individuals, targeting two perspectives: the user perspective and the governance or organisational perspective. Within the user perspective, business and personal users were identified and interviewed, as well as various adopter types (from keen adopters to non-adopters). It became clear through discussions with community partners and pilot interviews that distinguishing the personal and business respondents explicitly prior to the interview was problematic. Many respondents chose to self-identify both as personal users and as rural business owners, which occasionally led to a conflation of the needs of those users.

The interview data was thematically coded, following an informed grounded approach to identify any themes in the data. Codes were attributed to patterns in the textual data as observed by the researcher during the course of the analytical process. This process of thematic analysis is considered highly flexible (Braun and Clarke, 2006), and in consequence is useful in analyzing interview data from a range of respondents. 36 individuals were interviewed in total. In the B4RN case study there were 25 respondents (18 users, 6 governance individuals, and 1 policymaker) and in the B4GAL case study there were 11 respondents (8 users and 3 governance individuals). All respondents were assigned a number to ensure anonymity and as such each quote in the following section is attributed to B4RN or B4GAL 1, 2 and so on.

Findings

Anticipated Uses of Superfast Access

The potential uses of superfast broadband were a dominant thread, and formed the bulk of discussions with respondents. Respondents continuously reflected on their anticipated uses of superfast connectivity as a method of verbalising the relevance of access. A simple exercise was conducted with all self-identified ‘user’ pre-connectivity respondents (i.e. non governance individuals) to ask what types of services individuals use now, and which they may wish to access (or access more of) when speeds increase

to superfast. The aggregated results depicted in Figure 1 are from a total of 29 respondents[4]. This figure depicts a picture about Internet usage in the two rural regions. Prior to obtaining superfast, most respondents reported high usage of government services (for example, car and road taxes, and agricultural forms), banking, shopping online and email. Following these, working remotely and video services online were common as well. In terms of future superfast access, most respondents reflected on two areas of marked increased usage: media and entertainment services (for example, accessing BBC iPlayer) and video services, including video chat and uplink for working remotely. This video element of Internet access was highlighted across the respondents' interviews as something that may or may not be currently used in a limited form, but would certainly be accessed more readily under the auspices of superfast technology.

> '…we've just got a new baby niece in Reading and we've been facetiming and it just stops, and you're talking to them and suddenly it stops because it's just too slow' (B4RN 12).

Personal activities and options became limited if online video was the preferred method of delivery by external parties (i.e. training videos), perpetuating a sense of isolation and existence as a digital 'have-not' in a rural community.

> 'I sometimes feel we're excluded from certain aspects of what you might call modern life because things come on iPlayer…you sort of feel a bit excluded from things that a lot of people take for granted' (B4RN 14).

This perceived exclusion detracted from individuals' feeling of empowerment, and their perceived ability to engage with wider society, which relates to that individual's ability to remain resilient through shocks such as economic shifts (i.e. loss of job), and changes in social connections (i.e. friends moving away). In relation to this household scale, superfast access was perceived to contribute to proliferating social connections, education opportunities (through video) and a general feeling of connection with urban, or outside individuals and communities. This perceived contribution to household life was similarly linked to a sense of personal well being and empowerment, and enablement of personal skill building and self-sufficiency, thereby increasing perceived resilience despite being in a geographic location that may lack access to physical services.

This lack of access, and its relation with limiting opportunities, was also highlighted in relation to the economic sector. In relation to business, new superfast access in various economic sectors was aligned with the potential for new business creation, and for new opportunities within existing businesses; made possible by a higher capacity network with relatively unlimited download and upload capabilities that can support new and advanced broadband-enabled applications. This reflects individualised skill building and building new economic resources across the community, which again can enhance individual resilience in times of ongoing change. A continued lack of access would undermine any opportunity for such endeavours.

> 'I imagine that working is learning more and learning faster potentially, new skills and finding new ways of learning, to develop my business and to develop my professional skills, but also in terms of finding new services I can offer' (B4RN 18).

Interestingly, despite current connectivity challenges, most respondents owned multiple devices and accessed the Internet in a multitude of ways in the home and the workplace and this flexibility was increasing in its importance. In relation to businesses, this enabled flexible working patterns that could be altered to suit changing economic conditions, thus exhibiting resilience.

> '…more flexibility…we desk share…people are out on the road and they need to communicate when they are out on the road…we trying to embrace a bit more home working…' (B4GAL 7).

There was a strong desire to be more efficient and use these multiple devices and multiple access points simultaneously in the household unit as well. Therefore, when discussing anticipated uses of superfast services and its relation to resilience, it is relevant to look not just at the new broadband-enabled applications and services that are going to be accessed, but also the potential changing usage patterns within the household, acknowledging a potential increase of multiple access points through multiple different devices. This could alter how much influence broadband has on adaptive capacity building, a key facet of individual and community resilience.

The Power of Access

Accessibility through superfast broadband is often depicted as giving more 'power' to the user: power to access services desired and use the Internet in the way they see fit. The high level of significance placed on the Internet could be seen through discussions of everyday activities and the embodiment of freedom that the Internet provides as a tool of accessibility: freedom and control over media choices, services used, such as personal finances, and so on. Smaller, everyday activities were also highlighted in this manner; for example, using online services such as shopping through the myriad of online outlets and catalogues allowed respondents the control over how they planned their physical shopping excursions.

> '…When we had to do a shop, and in the past we would drive…now of course you can go on the website to find what you want, see if they've got it…' (B4RN 4).

One respondent discussed the previous use of a financial planner, and the switch to using the Internet to manage their interests, made possible through high-speed access.

> 'I mean…I have at least five to six online companies, a stock broker, all these different platforms…and it's just wonderful to have your own control, full control' (B4RN 18).

This depiction of power and control over one's own shopping and dynamic household or familial processes demonstrates the importance that people place in the Internet and its potential for enhancing individual empowerment. The Internet as a communication tool was a dominant discourse and relates well to these processes of empowerment. The increased communicability of respondents is related to giving them control over how and when they communicate with their social or business networks.

> 'We're pulling people from further away, you know Edinburgh, Glasgow, London, and they find the website and then taking a trip out and coming to see what we have… I would say, sort of 50% of our sales are done from the Internet, so it's very important' (B4GAL 1).

It is clear that obtaining superfast broadband was seen as a benefit to local entrepreneurs and businesses (i.e. through customer communication options) as well as individual residents (i.e. remaining in control of financial assets). Accessibility through superfast services is constructed simultaneously as the identification and the development of control over one's everyday activities – an empowering aspect of rural life that can contribute to individual perceived resilience.

The Rural Need for Speed

The constant desire for superfast speeds across the UK has been highlighted from a policy perspective at supranational, national and regional levels. This research sought

to investigate the role of speed in rural communities' broadband access, and identify the potential relationship rural users have with speed. The push to obtain superfast reflects several key motivations for digital infrastructure deployment. First is the desirability of such high speeds, of maintaining connectivity in line, or perhaps above, the averages reached across the UK.

> '…you do need that technological bridge. You know you need to be able to communicate efficiently and effectively with everybody else' (B4GAL 1).

This was structured as a spatial digital divide based on rural and urban constructs. Sitting alongside this desire to 'keep up', was the need for future proofing, for installing a service far above the average capacity of a UK network to ensure future connectivity requirements would be adequate.

> 'My biggest fear that pushed me to sort of really help out with B4RN as much as I could was that this might be the only opportunity to get these kinds of speeds' (B4RN 18).

It was therefore indicated that superfast broadband infrastructure, the need for speed, has been considered necessary to ensure future viability of rural villages in a broad sense, both for economic and societal interaction. This comfort of having speeds meeting or sitting above national average speeds provided a level of security for users.

> '…I think the speed is going to be far faster that what I need, but once it's in, it's in' (B4RN 2).

This need for security, or reliability, in Internet connectivity was discussed continuously from both a personal perspective and for economic activities, where it was exceedingly important to maintain reliability.

> '…In our case, reliability is a thousand times more important than speed…we get penalties if we don't fulfill our orders…' (B4RN 3).

The dominant narrative of superfast speeds then is not really about the actual speed, but the relationship the speed has with reliability: superfast Internet connectivity equates to a reliable, and importantly usable, service that can fulfill the anticipated needs of rural users. In this manner, the need for speed is in reality a need for reliability.

Perceptions of the 'Internet'

In developing the research on rural community broadband access and resilience, it was important to discuss how the Internet in general, and the switch to superfast broadband specifically, was perceived in the communities. Despite the importance of connectivity demonstrated in previous sections, there was scepticism of the importance of superfast broadband that must be considered. Those that were uninterested in obtaining superfast, for the most part, had limited Internet usage at present, and potentially a lack of interest in increased use.

> 'No, I don't feel the need to upgrade…I don't know…I mean maybe it would be good to be a bit faster sometimes…' (B4GAL 2).

In some cases this was linked to knowledge of technology, often a self-taught process, whereby the lack of knowledge is not detracting from current activities although it limits expanded use.

> 'you've got people who really don't interface with it much, don't know what it can do, their experience is very coloured by what they've been able to use so far' (B4RN 12).

Through these discussions, it became broadly identified that the Internet, and specifically the inclusion of superfast broadband, is heavily dependent on personal, individual contexts. This idea of individuality filtered through the discussions leading

the Internet to be broadly understood as an individual tool, reflected in both economic and social contexts.

> 'I think that the impact on community life communally it will not have a significant impact, individually it will make a significant impact' (B4RN 1).

The desired usage patterns discussed with respondents and presented above continue to support this, focusing on individualised activities, such as personal media, skill-building and individual economic diversification. More personal connections, such as contacting family or engaging with economy located outside the spatial scope of the community were also highlighted, and again reflect an inward, personal orientation to the use of the Internet, one that sits outside engagement with their spatially constructed rural community. The level of engagement within the rural community itself was thought to remain at the physical level, for example going to visit a neighbour, whereas outside connections would be maintained at a virtual level through the superfast service.

> '…outside use, rather than internal use. Your bank, shopping, doctors…those sorts of things, but not in terms of the community' (B4RN 4).

This discussion was expanded however, when reflecting not on different spatial orientations, such as community, but discussing future generations of rural dwellers.

> 'I'm thinking of the younger people in the village, not so much myself, but I think broadband will be the most important thing for the future' (B4RN 2).

It was through this perception of the Internet as a tool for future generations that the discussions widened to community level impact. For example, several respondents idealised that the community could see fewer people commuting and more working within the village itself, possibly from home, potentially influencing the economic viability of the village.

> '…if we've got younger communities and they're working in the community as well…I mean potentially they will have to reopen schools, not close [them]…doctors' surgeries will be better supported…' (B4RN 17).

This potential for community growth and age diversification meant that the village communities could become more diverse, living communities, as opposed to sleepy hamlets with relatively little economic activity.

> 'if we had a local shop….or more regular buses, or even just a variety of buses, then that would be great' (B4GAL 10).

This potential for increasing the economic activity of a village could engender multi-faceted lifestyles, supporting the development of 'active' rural communities. These perceptions of superfast broadband and its place in communities represents a complex picture, one dependent on not only personal perspectives and knowledge of Internet services in general, but also the implications it may have for personal well-being, empowerment and resilience. There is scope for reflecting on superfast broadband in relation to community enhancement through renegotiating patterns of living and working, possibly supporting the development of new resources and capacities and ultimately enhancing resilience at an overall community level.

Conclusion

This paper examines the relationship between rural dwellers and superfast broadband, and has sought to determine how superfast broadband is perceived in rural communities and whether it plays a role in enhancing rural individual and community resilience. Ultimately, the findings paint a complex, and at times contradictory, picture of the influence of superfast services for the rural user. Firstly, this paper highlights the importance of superfast broadband in utilising video-related services, as well as other

services with high capacity (download and upload) requirements. Secondly, superfast broadband can lead to the identification and development of control over everyday activities, which potentially will influence individuals' empowerment and personal capacity building, in both the household and business setting. Thirdly, speed is important because of its relationship with reliability, and the confidence reliability can afford in relation to personal and business decisions, potentially enhancing resilience in uncertain economic times. Finally, the Internet in general is perceived as an individualised tool, having links primarily with the individual household and business scale, which can enhance individuals' social connectivity and perceived empowerment, as well as skill building and economic empowerment (which can be influential to an existing business, or lead to the creation of new entrepreneurial ventures), and is heavily dependent on personal background, interest in technology, and relevant education. Superfast broadband does have the potential to lead to a renegotiation of both personal and business patterns of use, and this should be investigated further to fully understand the link that such individualised patterns may have with the community dynamic and potential community-level resilience. Resilience is a useful theoretical framework, pointing to research objectives and interview questions that can test the effect of broadband on businesses, households, and communities and the links between such scales. This enables a focus that has policy relevance and also speaks to the nature of 'being connected' in a wider sense.

There are several key areas for future research. Firstly, this paper presents findings from the first phase of a multi-phase project by speaking with people about the potential for superfast broadband and anticipated outcomes. It is now crucial to conduct research with connected individuals and communities to delve deeper into these themes and fully comprehend superfast broadband connectivity and how that relates to the resilience of individuals and communities. This will be carried out in the second phase of the current research, and will address issues around superfast broadband in communities leading to other forms of community participation This will ideally provide further indicators of capacity building within that community, contributing to resilience. Secondly, additional case studies into superfast broadband deployment would provide the opportunity to further validate findings and contribute to a deeper, more robust understanding of relationships between community and technology.

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Figure Captions

Figure 1: Current and Expected Internet Use of Respondents

Notes

[1] Superfast broadband is defined as those delivering download speeds of 30Mbit/s or more by both Ofcom and the European Union (Ofcom, 2013). DMCS define superfast broadband as speeds of 24Mbit/s or more (DMCS, 2013).

[2] See www.b4rn.org.uk

[3] See www.b4gal.org.uk

[4] As this is a small sample, this is not meant to be representative of complete rural Internet usage patterns, rather it serves to illustrate the discussions that took place and create a snapshot of some of the key themes surrounding Internet use in relation to speeds. Internet-enabled services were determined based on brainstorming activities and were added upon as respondents considered their usage. Three governance individuals also self-identified as users resulting in the sample of 29.